

Claims

1. A headrest controller for moving part or whole of a headrest of a vehicle seat toward a head of a passenger to reduce a distance between the headrest and the head in the horizontal direction by predicting or detecting a crash to a rear of the vehicle, characterized by comprising:

a head position detecting unit for detecting a predetermined state of approach or state of contact of the headrest to or with the head during a movement of the headrest; and

a control circuit for stopping the headrest based on a detection signal from said head position detecting unit.

2. A headrest controller as in claim 1, characterized in that the head position detecting unit includes two or more sensors which are different from each other in a system of detection and in that the control circuit stops the headrest when the predetermined state of approach or state of contact is detected by any of the sensors.

3. A headrest controller as in claim 1, characterized in that the head position detecting unit includes a sensor for detecting the predetermined state of approach and a sensor for detecting the state of contact and in that the control circuit

stops the headrest when the predetermined state of approach or state of contact is detected by either of the sensors.

4. A headrest controller as in claim 2, characterized in that the head position detecting unit has a plurality of sensors of at least one sensor type among the two or more sensor types different from each other in the method of detection.

5. A headrest controller as in claim 3, characterized in that the head position detecting unit has a plurality of sensors of at least either sensor type among sensor type for detecting the predetermined state of approach and sensor type for detecting the state of contact.

6. A headrest controller as in claim 4, characterized in that the head position detecting unit is provided in the front part of the headrest.

7. A headrest controller as in claim 5, characterized in that the head position detecting unit is provided in the front part of the headrest.

8. A headrest controller comprising:

a crash detecting sensor for predicting or detecting a crash to a rear of a vehicle;

a headrest driving mechanism for moving part or whole of a headrest of a vehicle seat toward a head of a passenger to reduce a distance between the headrest and the head in the horizontal direction;

a head position detecting unit for detecting that the headrest has entered a predetermined state of approach or state of contact to or with the head; and

a control circuit for operating the headrest driving mechanism when the crash detecting sensor outputs a detection signal and stopping the headrest driving mechanism when the head position detecting unit outputs a detection signal.

9. A headrest controller as in claim 8, characterized in that the head position detecting unit includes two or more sensors different from each other in a system of detection and in that the control circuit stops the headrest when the predetermined state of approach or state of contact is detected by any of the sensors.

10. A headrest controller as in claim 8, characterized in that the head position detecting unit includes a sensor for detecting the predetermined state of approach and a sensor for detecting the state of contact;

wherein the control circuit stops the headrest when the predetermined state of approach or state of contact is detected

by either of said sensors.

11. A headrest controller as in claim 8, characterized in that:

the crash detection sensor is a sensor for predicting a crash to the rear of the vehicle; and

the control circuit is configured to return the headrest to an initial position by operating the headrest driving mechanism in the opposite direction when a predetermined time passes after the crash detecting sensor outputs a detection signal.

12. An active headrest, a front part of the headrest being moved toward a head of a passenger based on a detection signal from a crash detecting sensor for predicting or detecting a crash to the rear of a vehicle, characterized by including:

a headrest driving mechanism for moving the front part of the headrest in a front-rear direction in which a distance between the head of the passenger and the front part of the headrest is decreased;

a head position detecting unit for detecting a distance between the head of the passenger and the front part of the headrest in the front-rear direction; and

an adjusting device for adjusting the distance between the head of the passenger and the front part of the headrest

in the front-rear direction to a predetermined amount by stopping the headrest driving mechanism based on a detection signal from the head position detecting unit.

13. An active headrest as in claim 1, characterized by including an automatic retraction device which moves the front part of the headrest rearward when the front part of the headrest has been stopped for a predetermined time in a predetermined position in which the distance between the head of the passenger and a front surface of the headrest is the predetermined amount.